

CLAIMS

1. In a data communication network wherein data is transmitted from a first node to a second node, a method for operating said first node, said method comprising:
5 transmitting data packets from said first node to said second node; and
receiving bitmap information from said second node that identifies packets to be retransmitted.

10 2. The method of claim 1 further comprising:
retransmitting said packets identified by said bitmap information to said second node.

15 3. The method of claim 1 further comprising:
storing said transmitted data packets in a retransmission buffer.

4. The method of claim 1 wherein said data communication network comprises a point to multipoint network.

20 5. The method of claim 4 wherein transmitting comprises:
transmitting employing a DOCSIS MAC protocol.

6. The method of claim 1 wherein transmitting comprises:
including a sequence number with each transmitted data packet to facilitate retransmission.

7. In a data communication network wherein data is transmitted from a first node to a second node, a method for operating said second node, said method comprising:
5 receiving data packets from said first node;
forming bitmap information to identify data packets for which retransmission will be requested; and
transmitting said bitmap information to said first node to request retransmission.

10 8. The method of claim 7 wherein said received data packets are identified by a serial number.

9. The method of claim 8 further comprising:
storing said received data packets in a buffer indexed by serial number.

15 10. The method of claim 9 wherein said bitmap information identifies gaps in a serial number sequence of said received data packets.

11. The method of claim 7 wherein transmitting said bitmap information
20 comprises transmitting said bitmap information upon expiration of an acknowledgment timer.

12. In a data communication network wherein data is transmitted from a first node to a second node, apparatus for operating said first node, said apparatus comprising:

means for transmitting data packets from said first node to said second node; and
means for receiving bitmap information from said second node that identifies
packets to be retransmitted.

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13. The apparatus of claim 12 further comprising:
means for retransmitting said packets identified by said bitmap information to
said second node.

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14. The apparatus of claim 12 further comprising:
means for storing said transmitted data packets in a retransmission buffer.

15. The apparatus of claim 12 wherein said data communication network
comprises a point to multipoint network.

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16. The apparatus of claim 15 wherein said means for transmitting comprises:
means for transmitting employing a DOCSIS MAC protocol.

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17. The apparatus of claim 12 wherein said means for transmitting comprises:
means for including a sequence number with each transmitted data packet to
facilitate retransmission.

18. In a data communication network wherein data is transmitted from a first node to a second node, apparatus for operating said second node, said apparatus comprising:

5 means for receiving data packets from said first node;
means for forming a bitmap to identify data packets for which retransmission will be requested; and
means for transmitting said bitmap to said first node to request retransmission.

10 19. The apparatus of claim 18 wherein said received data packets are identified by a serial number.

20. The apparatus of claim 19 further comprising:
means for storing said received data packets in a buffer indexed by serial number.

15 21. The apparatus of claim 20 wherein said bitmap identifies gaps in a serial number sequence of said received data packets.

22. The apparatus of claim 18 wherein said means for transmitting said bitmap
20 comprises means for transmitting said bitmap upon expiration of an acknowledgment timer.

23. In a data communication network wherein data is transmitted from a first node to a second node, a computer program product for operating said first node, said apparatus comprising:

5 code that transmits data packets from said first node to said second node;
code that receives bitmap information from said second node that identifies packets to be retransmitted; and
a computer-readable storage medium that stores the codes.

10 24. The computer program product of claim 23 further comprising:
code that retransmits said packets identified by said bitmap information to said second node.

15 25. The computer program product of claim 23 further comprising:
code that stores said transmitted data packets in a retransmission buffer.

26. The computer program product of claim 23 wherein said data communication network comprises a point to multipoint network.

20 27. The computer program product of claim 26 wherein said code that transmits comprises:
code that transmits employing a DOCSIS MAC protocol.

28. The computer program product of claim 23 wherein said code that transmits comprises:

code that includes a sequence number with each transmitted data packet to
5 facilitate retransmission.

29. In a data communication network wherein data is transmitted from a first node to a second node, a computer program product for operating said second node, said computer program product comprising:

10 code that receives data packets from said first node;
code that forms bitmap information to identify data packets for which retransmission will be requested;
code that transmits said bitmap information to said first node to request retransmission; and
15 a computer-readable storage medium that stores the codes.

30. The computer-readable storage medium of claim 29 wherein said received data packets are identified by a serial number.

20 31. The computer-readable storage medium of claim 30 further comprising:
code that stores said received data packets in a buffer indexed by serial number.

32. The computer program product of claim 31 wherein said bitmap information identifies gaps in a serial number sequence of said received data packets.

33. The computer program product of claim 29 wherein said code that
transmits said bitmap information comprises code that transmits said bitmap information
5 upon expiration of an acknowledgment timer.

FIG. 23